

WHAT IS CLAIMED IS:

1. A syringe barrel for an injection apparatus, the syringe barrel being adapted to be mounted on a cylinder holder that comprises a flange insertion groove, the syringe barrel comprising:

5 a flange having a projection on a rear surface thereof, said flange being adapted to be held by said flange insertion groove so as to fix the syringe barrel;

the projection being formed such that when the flange is inserted in the flange insertion groove on the cylinder holder and mounted in a use position, a tip of the projection is compressed whereby the flange is fitted into the flange insertion groove and fixed.

2. A syringe barrel according to claim 1, wherein the projection and the flange together are capable of being inserted in the flange holding groove and the tip of the projection is capable of being compressed so as to press the flange against a front sidewall surface of the flange insertion groove in a use position.

15 3. A syringe barrel according to claim 1, wherein the projection has a narrower width toward the tip, whereby the projection is more deformed when compressed.

4. A syringe barrel according to claim 1, wherein the flange has two flange cut portions symmetrically positioned in the flange opposite to each other.

20 5. A syringe barrel according to claim 4, wherein the flange has an even number of projections symmetrically disposed to one another on the flange over a portion of the flange where the two flange cut portion are not provided.

25 6. A syringe barrel according to claim 1, wherein the projection has a pyramid-like shape in which the bottom surface of the projection is rectangular shaped, the longer edge of the rectangle being along the circumferential direction of the flange, and inclination is formed toward the tip.

7. A syringe barrel according to claim 1, wherein the projection has a conical shape.

8. An injection system comprising:

a syringe barrel according to Claim 1; and

30 a cylinder holder, said cylinder holder comprising:

a flange insertion groove for holding the syringe barrel; and

a concave portion formed on an inner wall surface of the flange insertion groove to be contacted with the rear surface of the flange of the syringe barrel;

5           whereby, the concave portion is engaged with the projection on the rear surface of the flange when the syringe barrel is mounted in a use position.

9.       A cylinder holder comprising:

a flange insertion groove for holding a syringe barrel; and

10           a projection on an inner wall surface of the flange insertion groove to be contacted with a rear surface of a flange of the syringe barrel; the projection being so formed that when the flange is inserted in the flange insertion groove and mounted in a use position, the projection compresses the flange, thereby, the flange is fitted and fixed in the flange insertion groove.

10.      An injection system comprising:

15           a cylinder holder according to Claim 9; and

a syringe barrel, said syringe comprising:

a flange to be held by the flange insertion groove;

a concave portion formed on the rear surface of the flange;

20           whereby the concave portion is engaged with the projection on an inner wall surface of the flange insertion groove when the syringe barrel is mounted in a use position.

11.      A pre-filled syringe, comprising:

a syringe comprising a syringe barrel of any of Claims 1 to 7 or 10; and

a chemical solution filled in the syringe.

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